

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (cancelled)

2. (amended) ~~The waterproof digital electronic camera system according to claim 1~~ A waterproof digital electronic camera system comprising: a digital electronic camera having a digital electrical signal interface for downloading image information from the camera; a converter for converting signals upon the digital electrical signal interface of the camera to radio signals; and an enclosure hermetically sealing water and air tight both the digital electronic camera and the converter, the enclosure being transparent in at least an area of (i) a lens of the digital electronic camera so that pictures may be taken through the enclosure, and (ii) a radio signal output of the converter so that radio signals containing image information are communicable to regions exterior to the enclosure; wherein the converter comprises: an encoder-decoder for converting electrical signals received upon the digital interface of the electronic camera to further electrical signals that are suitably encoded so as to be converted to radio signals for further transmission; an antenna; and an electrical-to-radio signal converter for converting the encoded electrical signals to radio signals, and transmitting the radio signals through the antenna to regions exterior to the enclosure.

3. (original) The waterproof digital electronic camera system according to claim 2 wherein the digital signal interface of the electronic camera produces RS-232 serial digital electrical signals; and wherein the converter comprises: an RS-232 to TTL signal converter converting RS-232 serial digital electrical signals received upon the digital interface of the electronic camera to Transistor-Transistor Logic (TTL) serial digital electrical signals; an encoder-decoder converting the TTL electrical signals to further electrical signals suitably encoded so as to be converted to radio signals; an electrical-to-radio signal converter for converting the encoded electrical signals

to radio signals, and transmitting the radio signals through the antenna to regions exterior to the enclosure.

4. (amended) The waterproof digital electronic camera system according to claim [[1]] 2 further comprising: a rechargeable power source for providing power to at least the digital electronic camera; and a charging circuit, also within the enclosure, for converting some stimuli external to the enclosure into power suitable to recharge the rechargeable power source.

5. (original) The waterproof digital electronic camera system according to claim 4 wherein the rechargeable power source comprises: a battery.

6. (original) The waterproof digital electronic camera system according to claim 5 wherein the battery is located within a cavity seamlessly sealed to the exterior of the camera in a semi-rigid encapsulant; wherein the encapsulant may be removed, the battery replaced, and the cavity resealed.

7. (original) The waterproof digital electronic camera system according to claim 4 wherein the enclosure has and presents a blind bore; and wherein charging circuit comprises: a ferrite core, external to the enclosure, insertable within the blind bore; a primary transformer winding around the ferrite core and thus also external to the enclosure; and a secondary transformer winding within the enclosure in position around the bore; wherein when the ferrite core is inserted into the hole in the camera then energy may be efficiently coupled from the primary transformer winding to the secondary transformer winding during charging.

8. – 10. (cancelled)

11. (amended) A waterproof digital electronic camera system comprising: a digital electronic camera having a digital electrical signal interface for downloading image information from the camera; a converter for converting signals upon the digital electrical signal interface of the camera to radio signals; and an enclosure hermetically sealing water and air tight both the digital electronic camera and the converter, the enclosure being transparent in at least an area of (i) a lens of the digital electronic camera so that pictures may be taken through the enclosure, and (ii)

a radio signal output of the converter so that radio signals containing image information are communicable to regions exterior to the enclosure; a shutter; and a shutter circuit for electrically activating the shutter, to which shutter circuit electrical connection may suitably be made; a trigger circuit, also within the enclosure and electrically connected to the shutter circuit of the digital electronic camera, responsive to a stimulus external to the enclosure to produce an electrical signal responsively to which the shutter circuit will electrically activate the shutter of the digital electronic camera;

~~The waterproof digital electronic camera system according to claim 10~~ wherein the enclosure comprises: a recess, having two optically transparent opposing walls, into which an opaque object may suitably be temporarily placed so as to disrupt a line-of-sight between the walls;

and wherein the trigger circuit comprises: a[[n]] light-emitting device placed behind the transparent area of one opposing wall of the enclosure's recess; and a photosensor device behind the transparent area of the other opposing wall of the enclosure's recess;

wherein when an obstruction is placed in the recess then a line-of-sight optical link is interrupted which results in the photosensor device sending an electrical signal to the shutter circuit of the digital electronic camera to control the shutter of the digital electronic camera.

12. – 15. (cancelled)

16. (amended) A method of communicating with a sealed digital electronic camera system comprising: hermetically housing a digital electronic camera having a digital electrical signal interface for downloading image information from the camera in a housing that is (i) optically transparent in at least an area of a lens of the digital electronic camera so that pictures may be taken through the housing and (ii) transparent to radio: converting signals upon the digital electrical signal interface of the digital electronic camera to radio signals; and communicating the radio signals through the housing;

wherein the converting is of electrical signals upon the digital electrical signal interface to modulated radio signals;

~~The method according to claim 13 used with a digital electronic camera having an serial digital electrical signal~~ the digital electrical signal interface is of the RS-232 type; and

[[wherein]] the converting comprises: first-converting RS-232 serial digital electrical signals to Transistor-Transistor Logic (TTL) serial digital electrical signals in a RS-232 to TTL signal converter; second-converting the TTL electrical signals to electrical signals suitably encoded so as to be converted to radio signals for further transmission in an encoder-decoder; and third-converting in an electrical-to-radio signal modulator the encoded electrical signals to radio signals, and transmitting the radio signals through the enclosure.

17. (cancelled)

18. (amended) A method of communicating with a sealed digital electronic camera system comprising the steps of:

hermetically housing a digital electronic camera having a digital electrical signal interface for downloading image information from the camera in a housing that is (i) optically transparent in at least an area of a lens of the digital electronic camera so that pictures may be taken through the housing and (ii) transparent to radio;

converting signals upon the digital electrical signal interface of the digital electronic camera to radio signals;

communicating the radio signals through the housing; and

activating the shutter and other controls of the camera in and by a circuit, located within the enclosure and electrically connected to the digital electronic camera, wirelessly responsive to a stimulus external to the housing;

wherein the converting is of electrical signals upon the digital electrical signal interface to modulated radio signals;

transmission of the stimulus to the circuit is wireless without any wires penetrating the enclosure; and

~~The method according to claim 117 wherein~~ the activating of the shutter and other controls of the camera is in and by a circuit in form of a[[n]] mechanical-optical coupling device.

19. – 20. (cancelled)

21. (amended) A digital electronic camera CHARACTERIZED IN THAT optics and electronics of the camera are permanently within a solid mass of optically clear dielectric material and the camera contains essentially no gases whatsoever; and, ~~The digital electronic camera according to claim 19 FURTHER CHARACTERIZED IN THAT~~ communication of an actuation signal to the camera shutter and controls is via an opto-mechanical link; wherein the camera may suitably be immersed to great depth within the ocean without crushing.

22. – 25. (cancelled)

26. (new) A waterproof digital electronic camera system comprising: a digital electronic camera having a digital electrical signal interface for downloading image information from the camera; a converter for converting signals upon the digital electrical signal interface of the camera to radiation signals; and an enclosure hermetically sealing water and air tight both the digital electronic camera and the converter, the enclosure being transparent in at least an area of (i) a lens of the digital electronic camera so that pictures may be taken through the enclosure, and (ii) a radiation signal output of the converter so that radiation signals containing image information are communicable to regions exterior to the enclosure; wherein the converter comprises: an encoder-decoder for converting electrical signals received upon the digital interface of the electronic camera to further electrical signals that are suitably encoded so as to be converted to radiation signals for further transmission; and an electrical-to-radiation signal converter for converting the encoded electrical signals to radiation signals, and transmitting the radiation signals to regions exterior to the enclosure.

27. (new) The waterproof digital electronic camera system according to claim 26 wherein the digital signal interface of the electronic camera produces RS-232 serial digital electrical signals; and wherein the converter comprises: an RS-232 to Transistor-Transistor Logic (TTL) signal converter converting RS-232 serial digital electrical signals received upon the digital interface of the electronic camera to (TTL) serial digital electrical signals; an encoder-decoder converting the TTL electrical signals to further electrical signals suitably encoded so as to be converted to radiation signals; an electrical-to-radiation signal converter for converting the encoded electrical signals to radiation signals, and transmitting the radiation signals to regions exterior to the enclosure.

28. (new) The waterproof digital electronic camera system according to claim 26 further comprising: a rechargeable power source for providing power to at least the digital electronic camera; and a charging circuit, also within the enclosure, for converting some stimuli external to the enclosure into power suitable to recharge the rechargeable power source.

29. (new) The waterproof digital electronic camera system according to claim 28 wherein the rechargeable power source comprises: a battery.

30. (new) The waterproof digital electronic camera system according to claim 29 wherein the battery is located within a cavity seamlessly sealed to the exterior of the camera in a semi-rigid encapsulant; wherein the encapsulant may be removed, the battery replaced, and the cavity resealed.

31. (new) The waterproof digital electronic camera system according to claim 28 wherein the enclosure has and presents a blind bore; and wherein charging circuit comprises: a ferrite core, external to the enclosure, insertable within the blind bore; a primary transformer winding around the ferrite core and thus also external to the enclosure; and a secondary transformer winding within the enclosure in position around the bore; wherein when the ferrite core is inserted into the hole in the camera then energy may be efficiently coupled from the primary transformer winding to the secondary transformer winding during charging.

32. (new) A waterproof digital electronic camera system comprising: a digital electronic camera having a digital electrical signal interface for downloading image information from the camera; a converter for converting signals upon the digital electrical signal interface of the camera to radiation signals; and an enclosure hermetically sealing water and air tight both the digital electronic camera and the converter, the enclosure being transparent in at least an area of (i) a lens of the digital electronic camera so that pictures may be taken through the enclosure, and (ii) a radiation signal output of the converter so that radiation signals containing image information are communicable to regions exterior to the enclosure; a shutter; and a shutter circuit for electrically activating the shutter, to which shutter circuit electrical connection may suitably be made; a trigger circuit, also within the enclosure and electrically connected to the shutter circuit of the digital electronic camera, responsive to a stimulus external to the enclosure to produce an electrical signal responsively to which the shutter circuit will electrically activate the shutter of the digital electronic camera;

wherein the enclosure comprises: a recess, having two optically transparent opposing walls, into which an opaque object may suitably be temporarily placed so as to disrupt a line-of-sight between the walls;

and wherein the trigger circuit comprises: a light-emitting device placed behind the transparent area of one opposing wall of the enclosure's recess; and a photosensor device behind the transparent area of the other opposing wall of the enclosure's recess;

wherein when an obstruction is placed in the recess then a line-of-sight optical link is interrupted which results in the photosensor device sending an electrical signal to the shutter circuit of the digital electronic camera to control the shutter of the digital electronic camera.

33. (new) A method of communicating with a sealed digital electronic camera system comprising: hermetically housing a digital electronic camera having a digital electrical signal interface for downloading image information from the camera in a housing that is (i) optically transparent in at least an area of a lens of the digital electronic camera so that pictures may be taken through the housing and (ii) transparent to radio: converting signals upon the digital

electrical signal interface of the digital electronic camera to radiation signals; and communicating the radiation signals through the housing;

wherein the converting is of electrical signals upon the digital electrical signal interface to modulated radiation signals;

the digital electrical signal interface is of the RS-232 type; and

the converting comprises: first-converting RS-232 serial digital electrical signals to Transistor-Transistor Logic (TTL) serial digital electrical signals in a RS-232 to TTL signal converter; second-converting the TTL electrical signals to electrical signals suitably encoded so as to be converted to radiation signals for further transmission in an encoder-decoder; and third-converting in an electrical-to-radiation signal modulator the encoded electrical signals to radiation signals, and transmitting the radiation signals through the enclosure.

34. (new) A method of communicating with a sealed digital electronic camera system comprising the steps of:

hermetically housing a digital electronic camera having a digital electrical signal interface for downloading image information from the camera in a housing that is (i) optically transparent in at least an area of a lens of the digital electronic camera so that pictures may be taken through the housing and (ii) transparent to radio;

converting signals upon the digital electrical signal interface of the digital electronic camera to radiation signals;

communicating the radiation signals through the housing; and

activating the shutter and other controls of the camera in and by a circuit, located within the enclosure and electrically connected to the digital electronic camera, wirelessly responsive to a stimulus external to the housing;

wherein the converting is of electrical signals upon the digital electrical signal interface to modulated radiation signals;

transmission of the stimulus to the circuit is wireless without any wires penetrating the enclosure;
and

the activating of the shutter and other controls of the camera is in and by a circuit in form of a mechanical-optical coupling device.

35. (new) A digital electronic camera characterized in that optics and electronics of the camera are permanently within a solid mass of optically clear dielectric material and the camera contains essentially no gases whatsoever; and communication of an actuation signal to the camera shutter and controls is via an opto-mechanical link; wherein the camera may suitably be immersed to great depth under water without crushing.